

**PATENT**

**UNITED STATES PATENT AND TRADEMARK OFFICE**  
**(Case No. MBHB00-885-E; RPI No. 600.040)**

<b>In the Application of:</b>	)	
	)	
<b>Laurent Bellon et al.</b>	)	<b>Art Unit: Not Assigned</b>
	)	
<b>Serial No.: Not Assigned</b>	)	
	)	<b>Examiner: Not Assigned</b>
<b>Filed: Not Assigned</b>	)	
	)	
<b>For: DEPROTECTION OF RNA</b>	)	

**INFORMATION DISCLOSURE STATEMENT**

Mail Stop Patent Application  
Commissioner for Patents  
P.O. Box 1450  
Alexandria, Virginia 22313-1450

Dear Sir:

Pursuant to the duty of disclosure provided by 35 C.F.R. § 1.56 and §§ 1.97-98, the applicants wish to make the following references of record in the above-identified application. Copies of the references, listed on the attached Form PTO-1449, were previously submitted in related patent application serial number 09/164,964, and in accordance with 37 C.F.R. Section 1.98(d), are not being resubmitted.

Portions of the references may be material to the examination of the pending claims, however no such admission is intended (37 C.F.R. 1.97 (h)). The references have not been reviewed in sufficient detail to make any other representation and, in particular, no representation is intended as to the relative importance of any portion of the references. This Statement is not a representation that the cited references have effective dates early enough to be "prior art" within the meaning of 35 U.S.C. sections 102 or 103.

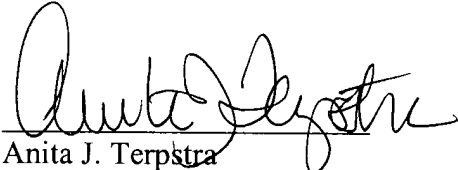
Applicants do not believe any fee is due with this submission. If this belief be in error and the Patent Office determines that the fee prescribed in the relevant portion of 37 C.F.R. Section 1.97 is applicable, the undersigned attorney by her signature hereby

authorizes any such fee to be debited from Deposit Account 13-2490.

In accordance with MPEP Sections 609 and 707.05(b), it is requested the documents cited (including any cited in applicant's specification which is not repeated on the attached Form PTO-1449) be given thorough consideration and that it be cited of record in the prosecution history of the present application by initialing on Form PTO-1449. Such initialing is requested even if the Examiner does not consider a cited document to be sufficiently pertinent to use in a rejection, or otherwise does not consider it to be prior art for any reason, or even if the Examiner does not believe that the guidelines for citation have been fully complied with. This is requested so that each document becomes listed on the face of the patent issuing on the present application.

Date: January 6, 2004

Respectfully Submitted,

By:   
Anita J. Terpstra  
Registration No. 47,132  
**McDonnell Boehnen  
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LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S  
INFORMATION DISCLOSURE STATEMENT

(Use several sheets if necessary)

APPLICANT:  
Laurent Bellon et al.

FILING DATE:

GROUP:

## U.S. PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	NAME	CLASS	SUB CLASS	FILING DATE
	AA	5,625,047	04/29/97	Been et al.			
	AB	4,987,071	01/22/91	Cech et al.			
	AC	5,631,359	05/20/97	Chowrira et al.			
	AD	5,334,711	08/02/94	Sproat et al.			

## FOREIGN PATENT DOCUMENTS

EXAMINER INITIAL		DOCUMENT NUMBER	DATE	COUNTRY	CLASS	SUB CLASS	TRANSLATION	
							YES	NO
	AE	96/19577	06/27/96	WO/PCT (Collins et al.)				
	AF	92/07065	9/28/91	WO/PCT (Eckstein et al.)				
	AG	0 360 257	03/28/90	EPO (Hampel)				
	AH	91/03162	03/21/91	WO/PCT (Rossi et al.)				
	AI	95/23225	08/31/95	WO/PCT (Stinchcomb et al.)				
	AJ	93/15187	08/05/93	WO/PCT (Usman et al.)				

## OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)

	AK	Beigelman et al., "Chemical Modification of Hammerhead Ribozymes," <u>J. Biol. Chem.</u> 270:25702-25708 (1995)
	AL	Burgin et al., "Chemically Modified Hammerhead Ribozymes with Improved Catalytic Rates," <u>Biochemistry</u> 35:14090-14097 (1996) (volume no mistakenly listed as 6)
	AM	Burke et al., "Structural Analysis and Modifications of the Hairpin Ribozyme," <u>Nucleic Acids and Molecular Biology</u> , edited by Eckstein and Lilley, Springer-Verlag Berlin Heidelberg, 10:129-143 (1996)
	AN	Cech et al., "Representation of the secondary and tertiary structure of group I introns," <u>nature structural biology</u> 1:273-280 (1994)
	AO	Cech, "Ribozymes and Their Medical Implications," <u>JAMA</u> 260:3030-3034 (1988)
	AP	Christoffersen and Marr, "Ribozymes as Human Therapeutic Agents," <u>J. Med. Chem.</u> 38:2023-2037 (1995)
	AQ	Collins and Olive, "Reaction Conditions and Kinetics of Self-Cleavage of a Ribozyme Derived From <i>Neurospora</i> VS RNA," <u>Biochemistry</u> 32:2795-2799 (1993)
	AR	Forster and Altman, "External Guide Sequences for an RNA Enzyme," <u>Science</u> 249:783-786 (1990)
	AS	Gasparutto et al., "Chemical synthesis of a biologically active natural tRNA with its minor bases," <u>Nucleic Acids Research</u> 20(19):5159-5166 (1992)
	AT	Guerrier-Takada et al., "The RNA Moiety of Ribonuclease P Is the Catalytic Subunit of the Enzyme," <u>Cell</u> 35:849-857 (1983)

EXAMINER:

DATE CONSIDERED:

EXAMINER: Initial if reference is considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include a copy of this form with next communication to applicant.

<b>FORM PTO-1449</b>  <b>LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>  (Use several sheets if necessary)	<b>ATTY. DOCKET NO.</b>	<b>SERIAL NO.</b>
	<b>APPLICANT:</b> Laurent Bellon et al.	
	<b>FILING DATE:</b>	<b>GROUP:</b>

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
AU	Guo and Collins, "Efficient <i>trans</i> -cleavage of a stem-loop RNA substrate by a ribozyme derived from <i>Neurospora</i> VS RNA," <u>EMBO J.</u> 14:368-376 (1995)	
AV	Hampel and Tritz, "RNA Catalytic Properties of the Minimum (-)sTRSV Sequence," <u>Biochemistry</u> 28:4929-4933 (1989)	
AW	Hampel et al., "'Hairpin' Catalytic RNA Model: Evidence for Helices and Sequence Requirement for Substrate RNA," <u>Nucleic Acids Research</u> 18:299-304 (1990)	
AX	Haseloff and Gerlach, "Simple RNA Enzymes with New and Highly Specific Endoribonuclease Activities," <u>Nature</u> 334:585-591 (1988)	
AY	Hogrefe et al., "Effect of excess water on the desilylation of oligoribonucleotides using tetrabutylammonium fluoride," <u>Nucleic Acids Research</u> 21:4739-4741 (1993)	
AZ	Jeffries and Symons, "A Catalytic 13-mer Ribozyme," <u>Nucleic Acids Research</u> 17:1371-1377 (1989)	
BA	Kim and Cech, "Three-dimensional model of the active site of the self-splicing rRNA precursor of <i>Tetrahymena</i> ," <u>Proc. Natl. Acad. Sci. USA</u> 84:8788-8792 (1987)	
BB	Limbach et al., "Summary: the modified nucleosides of RNA," <u>Nucleic Acids Research</u> 22(12):2183-2196 (1994)	
BC	Pace and Smith, "Ribonuclease P: Function and Variation," <u>J. Biol. Chem.</u> 265:3587-3590 (1990)	
BD	Perreault et al., "Mixed Deoxyribo- and Ribo-Oligonucleotides with Catalytic Activity," <u>Nature</u> 344:565-567 (1990)	
BE	Perreault et al., "Relationship between 2'-Hydroxyls and Magnesium Binding in the Hammerhead RNA Domain: A Model for Ribozyme Catalysis," <u>Biochemistry</u> 30:4020-4025 (1991)	
BF	Perrotta and Been, "Cleavage of Oligoribonucleotides by a Ribozyme Derived from the Hepatitis $\delta$ Virus RNA Sequence," <u>Biochemistry</u> 31:16-21 (1992)	
BG	Pieken et al., "Kinetic Characterization of Ribonuclease-Resistant 2'-Modified Hammerhead Ribozymes," <u>Science</u> 253:314-317 (1991)	
BH	Pyle et al., "Building a Kinetic Framework for Group II Intron Ribozyme Activity: Quantitation of Interdomain Binding and Reaction Rate," <u>Biochemistry</u> 33:2716-2725 (1994)	
BI	Rossi et al., "Ribozymes as Anti-HIV-1 Therapeutic Agents: Principles, Applications, and Problems," <u>Aids Research and Human Retroviruses</u> 8:183-189 (1992)	
BJ	Saville and Collins, "A Site-Specific Self-Cleavage Reaction Performed by a Novel RNA In <i>Neurospora</i> Mitochondria," <u>Cell</u> 61:685-696 (1990)	
BK	Saville and Collins, "RNA-Mediated Ligation of Self-Cleavage Products of a <i>Neurospora</i> Mitochondrial Plasmid Transcript," <u>Proc. Natl. Acad. Sci. USA</u> 88:8826-8830 (1991)	
BL	Scaringe et al., "Chemical synthesis of biologically active oligoribonucleotides using -cyanoethyl protected ribonucleoside phosphoramidites," <u>Nucl Acids Res.</u> 18:5433-5441 (1990)	
BM	Slim and Gait, "Configurally Defined Phosphorothioate-Containing Oligoribonucleotides in the Study of the Mechanism of Cleavage of Hammerhead Ribozymes," <u>Nucleic Acids Research</u> 19:1183-1188 (1991)	
BN	Uhlenbeck, "A Small Catalytic Oligoribonucleotide," <u>Nature</u> 328:596-600 (1987)	
BO	Usman and Cedergren, "Exploiting the chemical synthesis of RNA," <u>TIBS</u> 17:334-339 (1992)	
BP	Usman and McSwiggen, "Ch. 30 - Catalytic RNA (Ribozymes) as Drugs," <u>Annual Reports in Medicinal Chemistry</u> 30:285-294 (1995)	
BQ	Usman et al., "Automated Chemical Synthesis of Long Oligoribonucleotides Using 2'-O-Silylated Ribonucleoside 3'-O-Phosphoramidites on a Controlled-Pore Glass Support: Synthesis of a 43-Nucleotide Sequence Similar to the 3'-Half Molecule of an <i>Escherichia coli</i> Formylmethionine tRNA," <u>J. Am. Chem. Soc.</u> 109:7845-7854 (1987)	
BR	Usman et al., "Chemical modification of hammerhead ribozymes: activity and nuclease resistance," <u>Nucleic Acids Symposium Series</u> 31:163-164 (1994)	

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<b>FORM PTO-1440</b>  <b>LIST OF PATENTS AND OTHER ITEMS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>  (Use several sheets if necessary)	<b>ATTY. DOCKET NO.</b>	<b>SERIAL NO.</b>
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	<b>FILING DATE:</b>	<b>GROUP:</b>

OTHER DOCUMENTS (Including Author, Title, Date, Pertinent Pages, Etc.)		
BS	Usman et al., "Hamerhead ribozyme engineering," <u>Current Opinion in Structural Biology</u> 1:527-533(1996)	
BT	Vinayak et al., "Advances in the chemical synthesis and purification of RNA," <u>Nucleic Acids Symposium Series</u> 33:123-125 (1995)	
BU	Wincott et al., "Synthesis, deprotection, analysis and purification of RNA and ribozymes," <u>Nucleic Acids Research</u> 23:2677-2684 (1995)	
BV	Zaug et al., "The Tetrahymena Ribozyme Acts Like an RNA Restriction Endonuclease," <u>Nature</u> 324:429-433 (1986)	

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